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**A STUDY ON SAFETY PARTICIPATION AMONG FIREFIGHTERS IN THE
FIRE & RESCUE DEPARTMENT MALAYSIA**



SYED NOOR KAMAL BIN SYED HUSSEIN

**MASTER OF SCIENCE
(OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT)
OGOS 2019**

**A STUDY ON SAFETY PARTICIPATION AMONG FIREFIGHTERS IN THE
FIRE & RESCUE DEPARTMENT MALAYSIA**

By

SYED NOOR KAMAL BIN SYED HUSSEIN



**Thesis submitted to
School of Business Management ,
Universiti Utara Malaysia,
In Partial Fulfillment of the Requirement for Master of Science
(Occupational Safety and Health Management)**



Othman Yeop Abdullah
Graduate School of Business

Universiti Utara Malaysia

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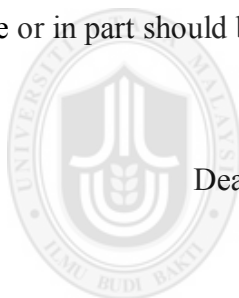
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ABSTRACT

The purpose of this study to analysis influence and relationship of safety participation among the Firefighters in FRDM Kuala Lumpur. This study examined the perception of Firefighter in the 14-fire station surrounding Kuala Lumpur on Independent variables safety-specific transformational leadership, individual resilience and safety training. A total of 162 questionnaire were distributed to the Firefighters in Kuala Lumpur and only 140 set returned and analysis with SPSS version 25. The findings of this study revealed that safety-specific transformational leadership, individual resilience and safety training have significant correlation with safety participation. The findings in this study provide valuable guidance for researchers and practitioners for identifying solutions that can improve safety and health, and decrease accident level at Fire & Rescue Department Malaysia Kuala Lumpur.

Keywords: safety-specific transformational leadership, Individual Resilience, safety Training, Safety participation, Fire & Rescue Department Malaysia—



ABSTRAK

Tujuan kajian ini untuk menganalisis pengaruh dan hubungan penyertaan keselamatan di kalangan Pegawai Bomba di Jabatan Bomba dan Penyelamat Kuala Lumpur. Kajian ini meneliti persepsi Pegawai Bomba, sekitar 14 balai bomba di Kuala Lumpur mengenai pembolehubah bebas terhadap Kepimpinan transformasi khusus keselamatan, daya tahan individu dan latihan keselamatan. Sebanyak 162 kertas soal selidik diedarkan kepada Pegawai Bomba di Kuala Lumpur dan hanya 140 yang dikembalikan dan dianalisis menggunakan SPSS versi 25. Penemuan kajian ini menunjukkan kepimpinan transformasi khusus keselamatan, daya tahan individu dan latihan keselamatan mempunyai korelasi yang signifikan dengan penyertaan keselamatan. Penemuan dalam kajian ini memberi panduan berharga bagi penyelidik dan pengamal untuk mengenal pasti penyelesaian yang dapat meningkatkan keselamatan dan kesihatan, dan mengurangkan tahap kemalangan di Jabatan Bomba dan Penyelamat Malaysia Kuala Lumpur.

Kata kunci: kepimpinan transformasi khusus keselamatan, daya tahan individu, latihan keselamatan, penyertaan keselamatan, Jabatan Bomba dan Penyelamat Malaysia

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I owe a particular debt of gratitude to my mother, Umar Salamah Binti Mohd Ismail, my children; Syed Noor Akmal bin Syed Hussein and my siblings for their love, motivation, support, patience and for standing by me through the toughest moments in my Master of Science study that has resulted in this project paper. Last but not least, I would like to thanks to all my friends especially to Nagama Appanah who have provided moral support and guidance to me for completing this project. In the end, I once again thank everybody who is direct or indirectly involved in my journey to complete the project paper.

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LIST OF ABBREVIATIONS

FRDM	Fire& Rescue Department Malaysia
SSTL	Specify Safety Transformational leadership
IR	Individual Resilience
ST	Safety Training
SP	Safety Participation
SPSS	Statistical Package for Social Science
IV	Independent Variable
DV	Dependent Variable



CHAPTER 1

INTRODUCTION

1.0 Introduction

This chapter presents the overview of the research background of the study, the problem statement, research objectives and research questions for this research. The significance of the studies as well as the outline of this thesis will also be explained.

1.1 Background of study

In Malaysia, safety at workplace has become a concern for both management and employee. Most of the disasters in industry are due to inadequacy of safety management system. From previous occurrence of Bhopal disaster, the errors that were observed are based on human error, technological error and system error (Vinodkumar and Bhasi 2010). According to Vinodkumar and Bhasi (2010), There were also findings that are related to Bhopal disaster which conclude that there have been inadequacy and ineffective programmes and policies for safety management and need modification for continuous improvement.

The involvement of the management and employee are significant for accident prevention and reduction in all industrial sectors as there are risks in workplace; and that includes firefighting occupation as well (Freaney 2011). As stated under the Fire Services Act (1988), the responsibilities of firefighters are to take measures according to law in extinguish, fight, prevent and control fire; in protecting life and property during fire event; in securing provision, maintain and establish proper regulation of fire-escapes; in securing provision of exits during fire from premises. Firefighters also need

6.0 REFERENCE

- Alexander, D.E. (2013). Resilience and disaster risk reduction: an etymological journey. *Natural Hazards and Earth System Sciences*. 13:2707–2716. Available from: <http://www.nat-hazards-earth-syst-sci.net/13/2707/2013/nhess-13-2707-2013.pdf>doi:10.5194/nhess-13-2707-2013.
- Alyn, K. (2011). Developing future leaders in the fire service. *Fire Recruit*. Retrieved from <http://www.firerescue1.com/cod-company-officer-development/articles/963943-n> Developing-future-leaders-in-the-fire-service/#
- Avey, J. B., Reichard, R. J., Luthans, F., & Mhatre, K. H. (2011). Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly*, 22(2), 127–152. <http://dx.doi.org/10.1002/hrdq.20070>.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. New York: American Psychiatric Pub.
- Amir, M. T. (2014). *The role of resilience in individual innovation*. Retrieved from <http://ro.ecu.edu.au/theses/873>
- Barling, Loughlin, C., & Kelloway, E. (2002). Development and test of a model linking safety-specific transformational leadership and occupational safety. *Journal of Applied Psychology*, 87, 488–496.
- Bass, B. M. (1997). Does the transactional-transformational leadership paradigm Transcend organizational and national boundaries? *Journal of American Psychologist*, 130-1 39.
- Bass, B. 1990. *Handbook of Leadership*, 3rd Ed. New York, NY: Free Press.
- Bass, B. 1998. *Transformational Leadership: Industrial, Military, and Educational Impact*. Mahwah, NJ: Erlbaum
- Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York, NY: Free Press.
- Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership*. New York, NY: Psychology Press.
- Beus, J. M., McCord, M. A., & Zohar, D. (2016). Workplace safety: A review and research synthesis. *Organizational Psychology Review*, 2041386615626243. 1-30.

- Bonanno, G. A., Galea, S., Bucciarelli, A., & Vlahov, D. (2007). What predicts psychological resilience after disaster? The role of demographics, resources, and life stress. *Journal of Consulting and Clinical Psychology*, 75(5), 671–82. doi: 10.1037/0022-006x.75.5.671
- Cattell, K., Bowen, P., & Edwards, P. (2016). Stress among South African construction professionals: A job demand-control-support survey. *Construction Management and Economics*, 34(10), 700–723. <http://dx.doi.org/10.1080/01446193.2016.1203967>.
- Chen, Y., McCabe, B., Hyatt, D. (2017) Impact of individual resilience and safety climate on safety performance and psychological stress of construction workers: A case study of the Ontario construction industry *Journal of Safety Research* 61 ;167–176.
- Christian, M.S., Bradley, J.C., Wallace, J.C., & Burke, M.J. (2009). Workplace safety: a meta-analysis of the roles of person and situation factors. *J Appl Psychol*.94(5):1103–27.
- Cohen, A., & Colligan, M. J. 1998. Assessing *occupational safety and health training: A literature review*. Cincinnati, OH: National Institute for Occupational Safety and Health. (Report No. 98145)
- Cohen, A., Colligan, M. J., Sinclair, R., Newman, J., & Schuler, R. (1998). *Assessing occupational safety and health training*. Cincinnati, Ohio: National Institute for Occupational Safety and Health, 98-145.
- David A. Molenaar (2010), The Influence of Transformational Leadership Training on Team Resilience, University of Twente, Enschede.
- Deppa, Karen F. (2015)., "Resilience Training for Firefighters: A Proposed Approach" *Master of Applied Positive Psychology (MAPP) Capstone Projects*. 82.
- Didla, Shama, Mearns, Kathryn and Flin, Rhona (2009)'Safety citizenship behaviour: a proactive approach to risk management', *Journal of Risk Research*,12:3,475 — 483.
- Du Xuesheng, Zhao Xintao (2017). An Empirical Investigation of the Influence of Safety Climate on Safety Citizenship Behaviour in Coal Mine, *Procedia Engineering* 26 (2011) 2173 – 2180
- E.Kevin Kelloway, Jane Mullen, Lori Francis.(2006), Divergent Effect of transformational and passive leadership on employee safety, *Journal of Occupational Health Psychology* 2006, Vol.11, No 1, 76-86.

- Eliophotou Menon, M. (2014). The relationship between transformational leadership, perceived leader effectiveness and teachers' job satisfaction. *Journal of Educational Administration*, 52(4), 509-528. doi:10.1108/jea-01-2013-0014
- Fire Services Act 341, law Of Malaysia 1988
- FRDM (2018), Statistics accident report 2015-2017, FRDM Headquarters Department Malaysia, Putrajaya.
- Flin, R., & Yule, S. (2004). Leadership for safety: industrial experience. *Qual Saf Health Care* 13: 45–51.
- Freaney, Christine, "Safety Culture and Safety Behaviours Among Firefighters. " PhD diss., University of Tennessee, 2011. http://trace.tennessee.edu/utk_graddiss/969
- Griffin, M. A., & Neal, A. (2000). Perceptions of safety at work: A framework for Linking safety climate to safety performance, knowledge, and motivation. *Journal of Occupational Health Psychology*, 5, 347–358.
- Goldenhar, L. M., Williams, L. J., & Swanson, N. G. (2003). Modelling relationships between job stressors and injury and near-miss outcomes for construction labourers. *Work & Stress*, 17(3), 218–240. <http://dx.doi.org/10.1080/02678370310001616144>.
- Gonagle, A.K., Childress, N.M., Walsh, B.M., & Bauerle, T.J. (2016). Can Civility Norms Boost Positive Effects of Management Commitment to Safety? *The Journal of psychology*, 1-15.
- Harland, Lynn K.; Harrison, Wayne; Jones, James R.; and Reiter-Palmon, Roni (2005)., "Leadership Behaviours and Subordinate Resilience" *Psychology Faculty Publications*. Paper 62.
- Hofmann, D. A., Morgeson, F. P., & Gerras, S. J. (2003). Climate as a moderator of the relationship between leader-member exchange and content specific citizenship: Safety climate as an exemplar. *Journal of Applied Psychology*, 88(1), 170-178.
- Hofmann, D.A., & Morgeson, F.P. (2004). The role of leadership in safety. In: Barling, J., Frone, M.R. (Eds.), *Psychology of Workplace Safety*. American Psychological Association, Washington, DC, pp. 159–180.
- Hollnagel, E., Woods, D. D., & Leveson, N. (2006). *Resilience engineering: Concepts and precepts*. Aldershot, England ;, Burlington, VT: Ashgate.
- Hylton Haynes. (2016). U.S. Firefighter Injuries in 2016, NFPA Journal: The magazine\ of the National Fire Protection Association.

- IOM (Institute of Medicine). (2002) Preparing for terrorism: Tools for evaluating the Metropolitan Medical Response System Program. Washington, DC: The National Academies Press.
- Institute of Medicine .Planning Committee on Workforce Resiliency Programs; Board on Health Sciences Policy;. Washington (DC): National Academies Press (US); 2012 Apr 9
- Inness, M., Turner, N., Barling, J., & Stride, C.B., (2010). Transformational leadership and employee safety performance: a within-person, between-jobs design. *Journal of Occupational Health Psychology* (15) 279–290.
- Jane Mullen. (2005). Safety-specific Transformational Leadership: An Experimental Study Saint Mary's University
- Kirstin Ferguson (2015), a study of safety leadership and safety governance for board members and senior executives, Queensland University of Technology.
- Kelloway, E.K., Barling, J., Kelley, E., Comtois, J., & Catien, B. (2003). Remote transformational leadership. *Leadership & Organization Development Journal*, 24(3), 163 - 172.
- Kelloway, E.K. & Francis, L. (2004) *Leadership in Organizations: Course Manual*. Halifax, NS; Author
- Kerlinger, F.N. & Pedhazur, E.J. (1973). Multiple regression in behavioural research. New York: Holt, Rinehart, and Winston.
- Keyfitz, L., Lumley, M. N., Hennig, K. H., & Dozois, D. J. A. (2012). The role of Positive schemas in child psychopathology and resilience. *Cognitive Therapy and Research*, 37(1), 97–108. doi: 10.1007/s10608-012-9455-6
- Krejcie, R. V., and Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*. 30. 607-610.
- Kolodej, C., Reiter, M. & Kallus K.W. (2012). *Inventar zur Erhebung resilienten Verhaltens im Arbeitskontext* [Inventory of resilient behaviour at the place of work]. Manuscript submitted for publication.
- Landy, F. J., & Conte, J. M. (2010). *Work in the 21st century: An introduction to industrial and organisational psychology* (3rd ed.). Hoboken, NJ: Wiley-Blackwell
- Mallak, L. (1998). Measuring resilience in health care provider organizations. *Health Manpower Management*. Volume 24 · Number 4 · 1998 · pp. 148–152.

- McAslan A. The concept of resilience. Understanding its origins, meaning and utility; 2010. Available from:
<http://torrensresilience.org/images/pdfs/resilience%20origins%20and%20utility.pdf>.
- Mullen, J. E., & Kelloway, E. K. (2009). Safety leadership: A longitudinal study of the effects of transformational leadership on safety outcomes. *Journal of Occupational and Organizational Psychology*, 82, 253-272. doi:10.1348/096317908X325313
- Natalie C. Skeepersa, Charles Mbohweb (2015), A study on the leadership behaviour, Safety leadership and safety performance in the construction industry in South Africa, Industrial Engineering and Service Science 2015, IESS 2015
- Neal, A., Griffin, M. A., & Hart, P. M. (2000). The impact of organizational climate And individual behaviour. *Safety Science*, 34(3), 99 – 109
- Neal, A., & Griffin, M. A. (2006). A study of the lagged relationships among safety climate, safety motivation, safety behavior, and accidents at the individual and group levels. *Journal of applied psychology*, 91(4), 946-953.
- NIMH (National Institute of Mental Health). (2002) Post-traumatic stress disorder (PTSD). Washington, DC: U.S. Department of Health and Human Services.
- Polit, D. F., Beck, C. T., & Hungler, B. P. (2002). *Essentials of Nursing Research: Methods, Appraisal, and Utilization, with Online Articles*: Lippincott Williams & Wilkins.
- René B.M. de Koster, Daan Stam, Bert M. Balk (2011). Accidents happen: The influence of safety-specific transformational leadership, safety consciousness, and hazard reducing systems on warehouse accidents, *Journal of Operations Management* 29 (2011) 753–765.
- Riad, Rana, "A Framework for Safety Training Using Virtual Reality Software" (2015). Electronic Theses and Dissertations. 173. <https://stars.library.ucf.edu/etd/1173>.
- Ricci, F., Chiesi, A., Bisio, C., Panari, C., & Pelosi, A. (2016). Effectiveness of occupational health and safety training: a systematic review with meta-analysis. *Journal of Workplace Learning*, 28(6). 1-21.
- Rita, Paul, Joseph (2017). Firefighter Fatalities in the United States, 2016, NFPA Journal: The magazine of the National Fire Protection Association.
- Robson, L. S., Stephenson, C. M., Schulte, P. A., Amick III, B. C., Irvin, E. L., Eggerth, D. E., & Peters, R. H. (2012). A systematic review of the effectiveness of occupational health and safety training. *Scandinavian journal of work, environment & health*, 38(3), 193-208

- Sekaran, U. (2005). *Research Methods for Business: A Skill-building Approach* (4th ed.). New York: John Wiley & Sons.
- Sekaran, U., & Bougie, R. (2010). *Research Methods for Business: A Skill Building Approach* (5th ed.). West Sussex: John Wiley.
- Shea, T., De Cieri, H., Donohue, R., Cooper, B., & Sheehan, C. (2016). Leading indicators of occupational health and safety: An employee and workplace level validation study. *Safety Science*, 85, 293-304.
- Southwick, S. M., & Charney, D. S. (2012). The science of resilience: Implications for The prevention and treatment of depression. *Science*, 338(6103), 79–82. doi: 10.1126/science.1222942
- Smith, R. (2015). *Advantages and barriers to transformational leadership implementation in a scientific laboratory* (Order No. 3684540). Available from Dissertations & Theses @ Walden University. (1660781257). Retrieved from <http://search.proquest.com/docview/1660781257?accountid=14872>
- Stone, J. (2018). OSHA Firefighter Training Standards. Work - Chron.com. Retrieved from <http://work.chron.com/osha-firefighter-training-standards-13656.html>
- Tae-eun Kim, Anne Haugen Gausdal. (2017). Leading for safety: A weighted safety Leadership model in shipping, *Reliability Engineering and System Safety* 165 (2017) 458–466
- Tapper, G. (2007). Thought leaders: From commander to coach – the evolution of the modern business leader. *New Zealand Management*, 21. Retrieved September 20, 2018, from ABI/INFORM Global. (Document ID: 1377824931).
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53–55. <http://dx.doi.org/10.5116/ijme.4dfb.8dfd>.
- Toderi, S., Gaggia, A., Balducci, C., & Sarchielli, G. (2015). Reducing psychosocial risks through supervisors' development: A contribution for a brief version of the "stress management competency indicato tool". *Science of the Total Environment*, 518-519, 345-351. doi:10.1016/j.scitotenv.2015.02.082.
- Toderi, S., Balducci, C., & Gaggia, A. (2016). Safety-specific transformational and passive leadership styles: A contribution to their measurement *TPM* Vol. 23, No. 2, 167-183
- Valero, J. N., Jung, K., & Andrew, S. A. (2015). Does transformational leadership build resilient public and nonprofit organizations? *Disaster Prevention and Management*, 24(1), 4-20. Retrieved from <https://doi.org/10.1108/dpm-04-2014-0060>

- VanBreda, A. (2011). Resilience theory: a literature review with special chapters on deployment resilience in military families & resilience theory in social work. Available from: http://vanbreda.org/adrian/resilience/resilience_theory_review.pdf
- Vinodkumar, M. N., & Bhai, M. (2010). Safety management practices and safety behaviour: Assessing the mediating role of safety knowledge and motivation. *Accident Analysis & Prevention*, 42(6), 2082-2093.
- Yuting Chen, Brenda McCabe, Douglas Hyatt. (2017). Impact of individual resilience And safety climate on safety performance and psychological stress of construction workers: A case study of the Ontario construction industry, *Journal of Safety Research* 61 (2017) 167–176.
- Vredenburg, A.G. (2002). Organizational safety: which management practices are most effective in reducing employee injury rates? *Journal of safety Research*, 33(2), 259-276.
- Wanberg, C. R., & Banas, J. T. (2000). Predictors and outcomes of openness to changes in a reorganizing workplace. *Journal of Applied Psychology*, 85(1), 132–142. <http://dx.doi.org/10.1037/0021-9010.85.1.132>
- Zhou, F., & Jiang, C. (2015). Leader-member Exchange and Employees' Safety Behavior: The Moderating Effect of Safety Climate. *Procedia Manufacturing*, 3, 5014-5021.
- Zohar, D. (2002). Modifying Supervisory Practices to Improve Subunit Safety: A Leadership-Based Intervention Model, *Journal of Applied Psychology*, 87(1), 156-163.
- Zohar, D., (2011). Safety climate: conceptual and measurement issues. *Handbook of Occupational Health Psychology*, pp. 141–164.



APPENDICS A

SCHOOL OF BUSINESS MANAGEMENT COLLEGE OF BUSINESS UNIVERSITI UTARA MALAYSIA

Dear Sir / Madam:

I am pleased to inform you that I am currently conducting a survey entitled **‘influence of leadership, resilience and training on safety behaviour: a study among firefighters in Fire & Rescue Department Malaysia.’**. The study intends to examine the relationship between Safety Specify transformational Leaderships, Individual resilience and safety training on safety behaviour, among firefighters in Fire & Rescue Department Malaysia.

Hence, I would be very grateful if you could answer all the questions in the survey. The survey should take about 20 minutes to complete. Please answer all questions and return the completed questionnaires promptly. Please note that your response is private and confidential. Individual respondents will not be identified in any data or reports. If you have any enquires about the survey, kindly contact me at 017-6062054 or email sarjen_fire@yahoo.com. Thank you very much for considering your involvement, time and cooperation in this survey.

Yours sincerely,

Syed

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College of Business,
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06010 Sintok, Kedah

PART 1:DEMOGRAPHIC QUESTIONS/SOALAN DEMOGRAFIK

The following question deals with the basic information about yourself. Please tick (/) in the appropriate box. / Soalan-soalan berikut berkaitan dengan maklumat asas mengenai diri anda. Sila tandakan (/) dalam kotak yang berkenaan.

1) Age/umur:

<input type="checkbox"/> 18-24	<input type="checkbox"/> 25-34	<input type="checkbox"/> 35-44
<input type="checkbox"/> 45-54	<input type="checkbox"/> 55years and above/ 55 tahun dan ke atas	

2) Marital Status/ Status Perkhawinan:

<input type="checkbox"/> Single/Bujang	<input type="checkbox"/> Married/Berkahwin	<input type="checkbox"/> Divorced/Bercerai
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3) Race/ Bangsa

<input type="checkbox"/> Malay/ Melayu	<input type="checkbox"/> Chinese/ Cina	<input type="checkbox"/> Indian/India
<input type="checkbox"/> Others (please specify):/ Lain-lain(sila nyatakan):		

4) Highest education level/ Tahap Pendidikan tertinggi

<input type="checkbox"/> SPM	<input type="checkbox"/> STPM	<input type="checkbox"/> DIPLOMA	<input type="checkbox"/> BACHELOR/DEGREE
<input type="checkbox"/> MASTER			

5) Length of employment in FRDM/ Tempoh pekerjaan dalam JBPM:

<input type="checkbox"/> Less than 1 year/ Kurang dari 1 tahun	<input type="checkbox"/> 1 - 4 years/ 1 - 4 tahun
<input type="checkbox"/> 5 – 9 years/ 5 - 9 tahun	<input type="checkbox"/> 10 – 14 years/ 10 – 14 tahun
<input type="checkbox"/> 15 – 19 years/ 15 – 19 tahun	<input type="checkbox"/> 20 years and above/ 20 tahun dan ke atas

PART 2: SAFETY SPECIFY TRANSFORMATINOL LEADERSHIP

Please tick (/) in the appropriate box to indicate your level of agreement for each statement below. Sila Tandakan (/) dalam kotak yang bersesuaian untuk menunjukkan tahap persetujuan anda untuk setiap pernyataan di bawah.

Item	Statement/ pernyataan	Level of safety behavior with this item				
		Strongly Disagree/ Sangat Tidak Setuju	Disagree/ Tidak Setuju	Neutral / Neutral	Agree/ Setuju	Strongly Agree / Sangat Setuju
1	My manager shows determination to maintain a safe work environment <i>Pengurus/Penyelia saya menunjukkan keazaman untuk mengekalkan persekitaran kerja yang selamat.</i>	1	2	3	4	5
2	My manager behaves in a way that displays commitment to a safe workplace. <i>Pengurus/Penyelia saya menunjukkan komitmen persekitaran kerja yang selamat</i>	1	2	3	4	5
3	My manager provides continuous encouragement to do our jobs safely. <i>Pengurus/Penyelia saya sentiasa galakan kami untuk melakukan kerja dengan selamat.</i>	1	2	3	4	5
4	My manager suggests new ways of doing our jobs more safely. <i>Pengurus/Penyelia saya sentiasa memberi cadangan baru untuk meningkatkan budaya kerja yang lebih selamat.</i>	1	2	3	4	5

5	My manager encourages me to express my ideas and opinions about safety at work. <i>Pengurus/ Penyalia saya mengalakkan saya untuk menyuarakan idea dan pendapat mengenai keselamatan di tempat kerja.</i>	1	2	3	4	5
6	My manager spends time showing me the safest way to do things at work. <i>Pengurus/ Penyalia saya meluangkan masa untuk menunjukkan cara berkerja dengan lebih selamat di tempat kerja.</i>	1	2	3	4	5
7	My manager listens to my concerns about safety on the job. <i>Pengurus/ Penyalia saya mendengar kebimbangan saya terhadap keselamatan kerja.</i>	1	2	3	4	5
8	My manager expresses satisfaction when I and my colleagues perform our job safely. <i>Pengurus/ Penyalia saya berpuashati dengan saya dan rakan melakukan tugas kami dengan selamat.</i>	1	2	3	4	5

PART 3: INDIVIDUAL RESILINCE

Please tick (/) in the appropriate box to indicate your level of agreement for each statement below. Sila Tandakan (/) dalam kotak yang bersesuaian untuk menunjukkan tahap persetujuan anda untuk setiap pernyataan di bawah.

Item	Statement/ pernyataan	Level of safety behavior with this item				
		Strongly Disagree/ <i>Sangat Tidak Setuju</i>	Disagree/ <i>Tidak Setuju</i>	Neutral <i>/ Neutral</i>	Agree/ <i>Setuju</i>	Strongly Agree / <i>Sangat Setuju</i>

1	It is so easy for me to stay focused and accomplish my goals. <i>Ianya mudah untuk saya fokus and mencapai matlamat</i>	1	2	3	4	5
2	I am confident that I could deal efficiently with unexpected events. <i>Saya yakin boleh kendali dengan cekap pada kejadian yang tidak diduga.</i>	1	2	3	4	5
3	I remain calm when facing difficulties because I can rely on my coping abilities. <i>Saya tetap bertenang apabila menghadapi masalah kerana saya kebolehan untuk mengatasinya.</i>	1	2	3	4	5
4	When confronted with a problem, I can usually find several solutions. <i>Apabila berhadapan dengan masalah ,saya dapat mencari beberapa kaedah untuk mengatasi masalah tersebut.</i>	1	2	3	4	5
5	I can cope with stress. <i>Saya boleh menghadapi tekanan.</i>	1	2	3	4	5
6	I can focus and think clearly when I am under pressure. <i>Saya boleh fokus dan berfikir dengan jelas apabila saya di bawah tekanan.</i>	1	2	3	4	5

PART 4: SAFETY TRAINING

Please tick (/) in the appropriate box to indicate your level of agreement for each statement below. Sila Tandakan (/) dalam kotak yang bersesuaian untuk menunjukkan tahap persetujuan anda untuk setiap pernyataan di bawah.

Item	Statement/pernyataan	Level of safety behavior with this item				
		Strongly Disagree/ Sangat Tidak Setuju	Disagree/ Tidak Setuju	Neutral / Neutral	Agree/ Setuju	Strongly Agree / Sangat Setuju
1	My company gives comprehensive training to employees in workplace health and safety issues. <i>Jabatan saya memberikan latihan komprehensif kepada anggota berkaitan dengan isu-isu keselamatan di tempat kerja.</i>	1	2	3	4	5
2	Newly recruits are trained adequately to learn safety rules and procedures. <i>Pekerja baru diberi latihan secukupnya untuk mempelajari peraturan dan prosedur keselamatan.</i>	1	2	3	4	5
3	Safety issues are given high priority in training programmes. <i>Isu keselamatan diberi keutamaan dalam program latihan.</i>	1	2	3	4	5
4	I am not adequately trained to respond to emergencies in my workplace. <i>Saya tidak dilatih secukupnya untuk bertindak terhadap situasi kecemasan di tempat kerja saya.</i>	1	2	3	4	5

5	Management encourages workers to attend safety training programmes. <i>Pengurusan menggalakkan pekerja menghadiri program latihan keselamatan.</i>	1	2	3	4	5
6	Safety training given to me is adequate to enable to me to assess hazards in the workplace. <i>Latihan keselamatan yang diberikan kepada saya adalah mencukupi untuk membolehkan saya menilai bahaya di tempat kerja.</i>	1	2	3	4	5

PART 5: SAFETY BEHAVIOUR(SAFETY PARTICIPATION)

Please tick (/) in the appropriate box to indicate your level of agreement for each statement below. Sila Tandakan (/) dalam kotak yang bersesuaian untuk menunjukkan tahap persetujuan anda untuk setiap pernyataan di bawah.

Item	Statement/pernyataan	Level of safety behavior with this item				
		Strongly Disagree/ <i>Sangat Tidak Setuju</i>	Disagree/ <i>Tidak Setuju</i>	Neutral / <i>Neutral</i>	Agree/ <i>Setuju</i>	Strongly Agree / <i>Sangat Setuju</i>
1	I promote the safety program within the organization. <i>Saya menggalakkan program keselamatan dalam organisasi.</i>	1	2	3	4	5
2	I put in extra effort to improve the safety of the workplace. <i>Saya berusaha lebih untuk meningkatkan keselamatan tempat kerja.</i>	1	2	3	4	5

3	I help my co-workers when they are working under risky or hazardous conditions. <i>Saya membantu rakan sekerja saya ketika mereka bekerja di bawah keadaan berisiko atau berbahaya.</i>	1	2	3	4	5
4	I voluntarily carry out tasks or activities that help to improve workplace safety. <i>Saya secara sukarela menjalankan tugas atau aktiviti yang membantu untuk meningkatkan keselamatan di tempat kerja.</i>	1	2	3	4	5
5	I always point out to the management, if any safety related matters are noticed in my work area. <i>Saya sentiasa menunjukkan kepada pihak pengurusan sekiranya ada perkara berkaitan keselamatan yang dapat dilihat di kawasan kerja saya.</i>	1	2	3	4	5

< THANK YOU FOR YOUR TIME AND PARTICIPATION>

<TERIMA KASIH ATAS MASA DAN PENGLIBATAN>